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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/601,042	06/19/2003	John F. Casey	10030748-1	8468

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Legal Department, DL429
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EXAMINER

CHEN, ERIC BRICE

ART UNIT	PAPER NUMBER
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1765

DATE MAILED: 02/07/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/601,042

Applicant(s)

CASEY ET AL.

Examiner

Eric B. Chen

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 6/19/03.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-5, 7-8, 10-11, 15, 17-18 and 20 is/are rejected.
- 7) ☒ Claim(s) 6, 9, 12-14, 16 and 19 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 6/19/03 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 6/19/03; 12/6/04.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Priority

1. Applicant is advised of possible benefits under 35 U.S.C. 119(a)-(d), wherein an application for patent filed in the United States may be entitled to the benefit of the filing date of a prior application filed in a foreign country.

Drawings

2. The drawings are objected to because reference character "600" in Figure 1 should apparently be -- 100 --, so the drawing is consistent with the specification (page 3, line 18). The reference character "204" in Figures 2, 4, and 5 are not described in the specification. Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. The replacement sheet(s) should be labeled "Replacement Sheet" in the page header (as per 37 CFR 1.84(c)) so as not to obstruct

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any portion of the drawing figures. If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Claim Rejections - 35 USC § 112

3. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

4. Claims 3, 5, 7-8, 10-11, 15, and 17-18 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

5. Claim 3 contains the trademark/trade name DU PONT QG150. Where a trademark or trade name is used in a claim as a limitation to identify or describe a particular material or product, the claim does not comply with the requirements of 35 U.S.C. 112, second paragraph. See *Ex parte Simpson*, 218 USPQ 1020 (Bd. App. 1982). The claim scope is uncertain since the trademark or trade name cannot be used properly to identify any particular material or product. A trademark or trade name is used to identify a source of goods, and not the goods themselves. Thus, a trademark or trade name does not identify or describe the goods associated with the trademark or trade name. In the present case, the trademark/trade name is used to identify/describe a conductive gold material and, accordingly, the identification/description is indefinite.

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6. Claims 5, 8, 11, and 15 contain the trademark/trade name KQ CL-90-7858. In the present case, the trademark/trade name is used to identify/describe a glass dielectric and, accordingly, the identification/description is indefinite.

7. Claims 7-8, 10, and 17 contain the trademark/trade name KQ. In the present case, the trademark/trade name is used to identify/describe a dielectric and, accordingly, the identification/description is indefinite.

8. Claim 8 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite because the claim is dependent on indefinite base claim 7.

9. Claim 11 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite because the claim is dependent on indefinite base claim 10.

10. Claim 18 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite because the claim is dependent on indefinite base claim 17.

Double Patenting

11. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. See *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and, *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

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12. A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent is shown to be commonly owned with this application. See 37 CFR 1.130(b).

13. Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

14. Claims 1-2, and 4 are provisionally rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims of copending application, Casey et al. (U.S. Patent Appl. Pub. No. 2004/0257194), in view of Nguyen (U.S. Patent No. 4,808,274). This is a provisional obviousness-type double patenting rejection.

15. As to claim 1, Casey claims a method for forming a conductor on a dielectric, comprising: a) depositing a conductive thickfilm on the dielectric; b) subsintering the conductive thickfilm; c) patterning the conductive thickfilm to define at least one conductor; d) etching the conductive thickfilm to expose the at least one conductor; and e) firing the at least one conductor at a full sintering temperature (claim 3). However, unlike Casey, applicant is silent with regards to a method of forming a conductor on a dielectric is directed at making a microwave circuit and that the dielectric is formed on a ground plane. However, Nguyen teaches that metallized substrates are conventionally used for microwave integrated circuits (column 2, lines 45-50) by depositing a dielectric (11) over a ground plane (22) (column 5, lines 47-48; Figure 3). Therefore, it would

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have been obvious to one of ordinary skill in the art at the time the invention was made to employ the applicants' method of forming a conductor on a dielectric for making a microwave circuit. One who is skilled in the art would be motivated to use any known method of forming a conductor a dielectric in order to make a microwave circuit.

16. As to claim 2, Nguyen discloses that the conductive thickfilm (12) (column 6, lines 1-4) comprises gold (column 7, lines 1-3).

17. As to claim 4, Nguyen discloses the dielectric (11) (column 5, lines 48-49) is a glass dielectric (column 5, lines 57-65).

18. Claim 20 is rejected provisionally rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims of copending application, Casey et al., in view of Nguyen, in further view of Wolf, et al., Silicon Processing for the VLSI Era, Vol. 1, Lattice Press (1986). This is a provisional obviousness-type double patenting rejection. Casey does not claim and Nguyen does not disclose the step of further comprising, after firing, dipping the at least one conductor in an unheated solution of 10:1 hydrofluoric acid to de-ionized water for about ten seconds, and then rinsing the at least one conductor in de-ionized water. However, Wolf teaches that diluted HF is a commonly used chemical for wet etching of electronic components (page 531-35). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to etch the conductor in an unheated solution of 10:1 hydrofluoric acid to de-ionized water for about ten seconds, and then rinsing the at least one conductor in de-ionized water. One who is skilled in the art

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would be motivated to use chemicals which have been previously established to successfully wet etch metals.

Allowable Subject Matter

19. Claims 6 and 9 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

20. The following is a statement of reasons for the indication of allowable subject matter. As to claim 6, the prior art fails to teach or suggest that subsintering comprises subsintering at a peak temperature of about 725°C for about ten minutes. As to claim 9, the prior art fails to teach or suggest that subsintering comprises subsintering at a peak temperature between 725°C and 850°C. The closest prior art, Nguyen, discloses a method for forming a conductor on a dielectric, comprising: depositing a conductive thickfilm (12/16/20) on the dielectric (11) (column 6, lines 1-4; Figure 3); firing the at least one conductor (12/16/20) at a full sintering temperature (column 8, lines 56-64); patterning the conductive thickfilm (12/16/20) (Figure 3) to define at least one conductor (20) (column 8, lines 66-68; column 9, lines 1-3); etching the conductive thickfilm (12) to expose the at least one conductor (20) (Figure 3). However, there is no motivation or suggestion of subsintering a conductive thickfilm, such that subsintering comprises subsintering at a peak temperature of about 725°C for about ten minutes as in the context of claim 6. Moreover, there is no motivation or suggestion of subsintering a

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conductive thickfilm, such that subsintering comprises subsintering at a peak temperature between 725°C. and 850°C, as in the context of claim 9.

21. Claim 12 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

22. The following is a statement of reasons for the indication of allowable subject matter. The prior art fails to teach or suggest depositing the conductive thickfilm on a substrate at about the same time the conductive thickfilm is deposited on the glass dielectric. The closest prior art, Nguyen, discloses a forming the conductive film (12/16) directly on the dielectric (11) which is the substrate (column 6, lines 1-10). However, there is no motivation or suggestion of depositing the conductive thickfilm on a substrate at about the same time the conductive thickfilm is deposited on the glass dielectric, as in the context of claim 12.

Conclusion

23. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Wood et al. (U.S. Patent No. 4,303,480) discloses printing a metal wire on a refractory substrate. Knöchel et al. (U.S. Patent No. 4,806,941) discloses forming a microwave component on a dielectric film attached to a substrate. Miller et al. (U.S. Patent Appl. Pub. No. 2001/0012692) discloses forming conductor line patterns on a substrate. Casey et al. (U.S. Patent Appl. Pub. No. 2004/0258841) discloses a method for depositing a thick film on a substrate.

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Any inquiry concerning this communication or earlier communications from the examiner should be directed to Eric B. Chen whose telephone number is (571) 272-2947. The examiner can normally be reached on Monday through Friday, 8AM to 4:30PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nadine G. Norton can be reached on (571) 272-1465. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

EBC
Jan. 27, 2005

EBC

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SUPERVISORY PATENT EXAMINER
Nadine